

Appl. No. 09/501,445  
Amdt. Dated 2 Aug 2004  
Reply to Office action of 25 February 2004

Attorney Docket No. 26.0178

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### REMARKS

Claims 1-13 are pending in this application. Claims 1-13 were rejected in the Office Action dated 25 February 2004 ("Office Action"). Applicants traverse the outstanding rejections. Reconsideration and allowance of claims 1-13 is hereby requested.

The Examiner states that the citations to references to GeoFrame in the specification and two publications listed on lines 29-32, page 7 of the specification are inadequate for consideration in as an Information Disclosure Statement.

Applicants note the two publications listed on lines 29-32, page 7 of the specification were duly cited in and submitted in connection with the Information Disclosure Statement dated 14 March 2000. A copy of the IDS, the two references as originally submitted, and the return postcard are attached for the Examiner's reference. Proper consideration of these references is requested.

Applicants are submitting a supplemental IDS citing a GeoFrame manual for consideration.

The Examiner states that there has apparently been an attempt at incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication. However, the Examiner has not pointed to any particular attempt of incorporation of any specific essential material in the present application. Applicants have not found any such improper attempt at incorporation. The Examiner is requested to specifically point out what material is considered essential and is being attempted to be incorporated, or withdraw any outstanding objection of this nature.

The Examiner has rejected claims 1-13 under 35 U.S.C 112, first paragraph, as failing to comply with the enablement requirement. The Examiner states that the claims contain subject matter which was not described in the specification in such as way as to enable one skilled in the art . . . to make and/or use the invention.

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To support the Examiner's burden to make the enablement rejection, the Examiner merely states that "the claimed method, including the model and its implementation do not appear to be supported by the specification." Applicants respectfully submit that the Examiner's statement falls far short of establishing a reasonable basis to question the enablement provided for the claimed invention.

For example, the MPEP 2164.04, states the "examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure", citing *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993), and "specific technical reasons are always required [to support a *prima facie* case of lack of enablement.], citing *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

Accordingly, applicants respectfully submit that the Examiner, by not providing any specific explanation as to why the claimed method is not enabled, has failed to present a *prima facie* case for lack of enablement, and the rejection should be withdrawn.

Furthermore, applicants respectfully submit that the claimed method, including the recited geophysical earth model, is adequately enabled in the specification. For example, on page 5, lines 24-32, the specification adequately explains to one skilled in the art how to formulate such a model using, for example, "the Common Model Builder of GeoFrame and inputting suitable geophysical data, such as surface seismic data that has been interpreted using appropriate known methodologies." The specification further teaches the approach of the preferred embodiment and refers to Figure 3. Furthermore, specification also teaches on page 4, lines 4-10:

"The geophysical model can be of a type generally used in designing seismic surveys. The model needs sufficient detail to identify the target but does not need to be of exceptional accuracy or resolution, for example a macro-model will be appropriate. A suitable model will include the reflecting horizons and the assumed acoustic impedances of the layers of formation in the model. The model includes in it the receiver location and positions, typically located in the position of a borehole included in the model. The surface will also be defined to allow source location regions to be defined."

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Thus the specification teaches the preferred characteristics of a suitable geophysical model and gives an example of a commercially available software package which has been found to be well suited to the present invention. It is respectfully submitted that with such a teaching, one of skill in the art would not have to undergo undue experimentation to make or practice the present invention.

In the Office Action, the Examiner rejected claims 1-13 under 35 U.S.C. 102 (a) as being anticipated by PCT published application WO 99/54758 to Thomsen (hereinafter "Thomsen"), and under 35 U.S.C. 102 (b) as being anticipated by each of US Patent No. 5,583,825 to Carrazzone (hereinafter "Carrazzone"), US Patent No. 5,838,634 to Jones et al. (hereinafter "Jones et al."), US Patent No. 6,128,577 to Assa et al. (hereinafter "Assa et al."), and US Patent No. 5,995,446 to Meyer et al. (hereinafter "Meyer et al.").

It is noted at the outset that neither Assa et al. which issued on 3 October 2000, nor Meyer et al. which issued on 30 November 1999 properly qualifies as prior art under 35 U.S.C. 102 (b), since neither were published more than 1 year before the filing date of the present invention – 10 February 2000. Therefore the rejections based on those references should be withdrawn.

It is well established that the burden of establishing a *prima facie* case of anticipation is with the U.S. Patent and Trademark Office. Anticipation requires that the disclosure in a single prior art reference teach each element of the claim under consideration. The Examiner has not provided a specific explanation of how each claim limitation is disclosed in each of the cited references. Instead, the Examiner has merely provided general summaries or abstracts of each reference without providing little if any correspondence between the cited references and the specific elements of the claims of the present invention.

Accordingly, it is respectfully submitted that the examiner has not presented a *prima facie* case of anticipation, and therefore the rejections should be withdrawn.

Furthermore, applicants have been unable to find in any of the cited reference relied on by the Examiner the disclosure of the following limitations for Claim 1:

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- v) *using the model to propagate ray traces from the receiver positions to the source location region via the target;*
- vi) *sub-dividing the source location region according to ray trace density resulting from the propagation; and*
- vii) *designating one or more potential source positions according to the ray trace density in a respective sub-division.*

Therefore, it is respectfully submitted that none of references relied on by the Examiner anticipate a method as recited in claim 1. Accordingly, it is respectfully submitted that the grounds for rejection of claim 1, and all of the dependent claims 2-13, be withdrawn.

In light of the above remarks, applicant believes that the present application and claims 1-13 are in proper condition for allowance. Such allowance is earnestly requested. If the Examiner is contemplating any action other than allowance of all pending claims, the Examiner is urged to contact Applicants' representative, Mr. William Wang, in Japan by telephone, fax or by using email: [wwang@slb.com](mailto:wwang@slb.com).

In the event that any additional fees or credits are due owing to this response, the Commissioner is hereby authorized to charge the amount necessary to cover the any fee that may be due or to credit any overpayment to Deposit Account 50-1122.

Respectfully submitted,



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